

be supplied in quantities required in each particular case; (2) these elements must be presented in a digestible and assimilable form and suited to the special physiological make-up of the child, and (3) the food must be of such a nature as to exercise and develop latent digestive capacity. Instead of modifying the specific physiological make-up of a child to a certain kind of food, a task which is very often impossible, Pritchard believes in adapting the food to physiologic idiosyncracies found in every case. Food requirements can be approximately estimated in terms of calories and on a basis of weight and age and, further, a mixed diet of proteins, fats and carbohydrates is better for a growing baby than any one or two of the proximate principles without the others. Dr. Vining's figures on the relative proportions of the elements of human and cow's milk are incorrect and Pritchard places the difference in the amount of lactose at 25 per cent. instead of 10 per cent., and in the amount of protein at 100 per cent. to 150 per cent., instead of less than 10 per cent. This is the central argument against the substitution of the one milk for the other in infant feeding. A food adaptable to a three months' infant should yield 495 calories and contain the three elements in the proportion found in human milk. The dilution of infants' food is too often excessive, the success of the "whole milk" method being probably based on the limited quantity of water used in that method. Individual adaptation is essential to the successful administration of food to infants and it is believed impossible for the physician to recognize pathological manifestations and modify the food accordingly if his practice is confined to one method of feeding. If the principles of percentage feeding are understood synthetic foods can be prepared in many ways to satisfy different physiological requirement. Dried milk if properly modified has all the advantages and few of the disadvantages of so-called dairy milk.

OBSTETRICS

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The Nourishment and Care of Prematurely Born Children.—LANGSTEIN (*Berl. klin. Wchnschr.*, 1915, No. 24), reports the results of methods in use in the Empress Augusta Victoria Hospital for infants in Berlin. Among the inmates were 250 prematurely born children. Formerly it was customary to keep these in an incubating room whose temperature varied from 80° to 90°, and where the air contained 60 per cent. of moisture. There was reason to believe, however, that children kept in this room were less robust and developed less rapidly than those brought outside and given a better atmosphere and, accordingly, the use of the room was abandoned. The writer kept these prematurely born children in an ordinary nursery and supplied artificial

warmth as needed for each child. The apparatus employed was one which used circulating hot water as a source of heat. In feeding children, the best method consisted in introducing food into the stomach through a small stomach-tube and very small quantities of milk were employed in feeding, the quantity increasing gradually but steadily. After two weeks of such care the infant was usually able to drink. Prematurely born children were fed about every two hours or at least given nine or ten feedings in twenty-four hours. When there was no mother's milk available to introduce through the tube, modification of cow's milk diluted with water and containing sugar and with a considerable fat percentage were employed. In some infants, mixtures which contained some percentage of a cereal material with sugar proved advantageous. All prematurely born children showing a tendency to rachitis and spasmophilia should be given preparations of calcium against such dangers. Calcium phosphate or calcium lactate or tricalcol in combination with cod-liver oil gave especially good results. As early as possible, small doses of iron were given, if examination of the blood of the infant showed that as early as the second or third month of extra-uterine life, symptoms of anemia had developed. A good prognosis for the child may be given when at from six and a half to seven months the child weighs 1000 gms. and is 34 cm. long. It is evident that the induction of labor in contracted pelvis may be resorted to without benefit if adequate precautions be not taken to care, after its birth, for the prematurely born infant.

Shall More than One Finger be Employed in Vaginal Examination in Parturient Cases?—In the effort to lessen danger through vaginal examinations, AHLFELD (*Monats. f. Geburtsh. u. Gynäk.*, 1915, Band xli, Heft 6), has criticised the introduction of more than one finger in such examinations and the method described by Schultze in his textbook and by others as well. His printed instructions were intended especially for midwives and Schultze reviews his instructions, which certainly indicate no lack of precaution in the matter of asepsis. The discussion seems a very small matter, and yet it is evident that the omission of thorough vaginal examinations may become a danger to the patient unless practical and not theoretical methods prevail. If antiseptic precautions be honestly and thoroughly carried out, and sterile gloves be employed, it were far better that the entire hand, if necessary and possible, be introduced and a thorough examination be made than that a false diagnosis resulting in harm to the patient should result because but one finger was employed. SCHULTZE (*Monats. f. Geburtsh. u. Gynäk.*, 1915, Band xlii, Heft 4), takes this view and makes a point in favor of a sensible and practical technic very clear in his timely communication. His warning is especially timely in all cases where there is delay in labor. In such, unless the head has become well engaged, the pelvis should be palpated by as many fingers as can be safely introduced. In this way important pelvic abnormality will be discovered, the nature and exact position of the presenting part, its relation to the brim and to the lower strata of the pelvis, the presence or absence of flexion, and descent and rotation. Unless a thorough examination be made it is quite possible for the cord to prolapse but a short distance and this loop to become pinched between the head

and the pelvic brim, resulting in the death of the fetus, when a superficial examination with one finger might not detect the presence of the prolapsed cord and thus fail to arouse the obstetrician to appropriate efforts to save the life of the infant.

Pelvimetry by the Roentgen Rays.—RUNGE and GRUENHAGEN (*Monats. f. Geburtsh. u. Gynäk.*, 1915, Band xlii, Heft 4), reviews several of the methods for measuring the pelvis by the Roentgen rays and describes a method which they have found valuable. This consists in determining certain points of the pelvis by the ray and then by algebraic formulae, obtained by previous examination and calculation, working out the proportions of a given pelvis. The method is illustrated by equations and by geometrical figures. It should prove of interest to all those who are concerned in the mathematics of modern pelvimetry.

Complications Arising during Labor through Maldevelopment of the Uterus.—VAN DE VELDT (*Monats. f. Geburtsh. u. Gynäk.*, 1915, Band xlii, Heft 4), recognizes what he terms uterus unicornis through failure in one of the Müllerian ducts to completely develop. This deformity is not very frequent and has little comparative importance so far as practical obstetrics is concerned. Double uterus and vagina are not exceedingly rare and uterus duplex is double development of the uterus only. Further, there may be two uterine bodies and but one neck and again the uterus may be cordiform where the fundus is somewhat flattened and the uterus assumes an irregular heart-like shape, though there may be a double uterine cavity with greater or less extent of the dividing partition, and again, this dividing partition may be in different portions of the uterine extent. In labor, we recognize the complications arising from a defective development of the uterus, as in infantile uterus and hypoplasia, and we also note that complications in labor may occur through congenital anomalies of the cervix. Cases where difficulty in labor occurs through uterus unicornis are not often observed. Moldenhauer reports a case of labor in which a premature fetus was found in the upper portion of a uterus apparently enclosed in a thin-walled sac, which had posteriorly an opening about the size of a silver half-dollar through which membranes and placental mass were protruding. It is interesting to observe that the placenta had attached itself to the weakest portion of the uterus. In cases of double uterus, labor may be complicated and delayed by that portion of the uterus which has not been pregnant. Roynes described a case before the Obstetrical Society of Paris where the vaginal portion of the pregnant uterus was very high in the pelvis and directed toward the right of the median line. The patient was evidently a primipara, the vaginal end of the uterus somewhat shortened and the os closed. By ballottement, one could obtain the head very high through a thin lower uterine segment; the fingers could not reach the promontory. In the left quadrant of the pelvis one found a small semihardened mass whose nature it was difficult to determine. This subsequently proved to be the unimpregnated half of the uterus which had become so wedged into the pelvis as to hinder the descent of the fetal head in the pregnant portion of the womb. That a uterus duplex may occasion difficulty in labor has been illustrated by STANLEY

(*Zentralbl. f. Gynäk.*, 1906, No. 2). His patient has premature rupture of the membranes and pain at intervals for twenty hours resulting in the complete dilatation of the cervix. Presentation was breech but the child showed no tendency to descend into the pelvis. As uterine pains were good, the force of the uterus seemed to be directed rather against the left side of the pelvis than in its axis. The effort was made by placing the patient upon the left side, to bring about a better application of force, but this did not succeed. Often in multiparous patients, a combination of weakness of the uterine muscle itself, expulsive segment and rigidity of the cervix produces the complications in labor which predispose to rupture of the uterus. Gosset and Tissier reported before the Obstetrical Society of Paris, 1906, a case in which the patient died during labor from hemorrhage from rupture of the lower uterine segment with the anatomical conditions just described. Somewhat similar in effect are those cases of atresia of the genital tract, either acquired from preëxisting inflammation or congenital where the anatomical conditions predispose to rupture of the uterus. The reviewer recently saw a case of uterine rupture in a multiparous woman who entered the examining-room of a large general hospital for admission in labor. While making her application, the membranes ruptured and considerable amniotic fluid escaped. She was then transferred to a maternity department. On admission the abdomen was large, fat and flabby, its contour indefinite, the exact contour of the uterus and the position and presentation of the child could not be made out. Fetal heart sounds were not heard. On vaginal examination, the vagina was full of clotted blood. When this had been washed away by a lysol douche, the cervix was resisting, thickened, admitting three fingers. The placenta was attached at the edge of the external os and had partly separated, which accounted for the hemorrhage. The child lay obliquely across the pelvis, an arm had partially prolapsed. The patient had had several strong uterine contractions and the uterus was so tightly closed upon the child that efforts to perform version would have been exceedingly dangerous. In addition to the complications described, examination also disclosed a transverse rupture through the lower uterine segment about two inches long on the posterior aspect of the uterus. As soon as possible, the abdomen was opened and the Porro operation was performed. The rent in the lower uterine segment was closed, leaving however, room enough in the middle for a gauze drain which was passed through from the pelvis into the cervix and vagina. The patient was severely shocked, requiring transfusion and other stimulation, but rallied successfully from the operation. Van de Velde describes the case of a patient, aged twenty-nine years, pregnant for the first time, who came to labor at term, but the attending physician could not recognize a normal condition of the cervix and could not make out the fetal presentation. The contraction ring was high and the axis of the uterus extended obliquely across the pelvis. In the region of the lower uterine segment there was great tenderness. On vaginal examination, the finger could make out that the fetal head was in the pelvic cavity and the sutures could be recognized indistinctly through the distended uterus. No opening in the uterus wall could be made out and when the patient was anesthetized and specula used, it was still impossible

to find the os uteri. On the right side and high up behind the pregnant uterus could be felt a vaginal portion of the cervix and the os, through which a finger could be inserted. On repeated examination under anesthesia the finger could be inserted to the fundus of this small uterus, which was thus proved to be empty and not in a pregnant condition. The vagina and perineum were incised and vaginal cesarean section was performed. The bladder was drawn high up. It was difficult to push it aside. The abdominal cavity was not opened; the membranes protruded and were easily ruptured and a medium-sized living fetus was removed by forceps. The placenta was delivered manually; the uterus tamponed with iodoform gauze and ergot given hypodermically. The incisions were closed with catgut and an opening left into the uterus for drainage. The patient made a good recovery and was shortly after pregnant for the second time in the right uterus, which aborted about the third or fourth month, and after this, again in the left uterus, the child being born living, but dying soon afterward and evidently premature. The patient then had a tuberculous peritonitis, from which she recovered after section. On opening the abdomen, both Fallopian tubes were found covered with small tubercles and consequently were removed. There seemed to be two uteri smaller than normal joined together at the lower portion at the cervix and diverging in the bodies. The urinary bladder lay between the two corpora and behind both cervixes. On vaginal examination both cervixes could be detected and it had been observed that during menstruation blood issued from both of the uteri. Various authors describe differently the uterus which apparently has no cervix and no os uteri which can be found at the time of labor. In some, the case described by Van de Velde would serve as a type; in others there is no double cervix, and the condition would be best described under the term atresia. Usually by careful examination, one can detect the opening of the cervix and, taking this as a guide, open the uterus by some form of incision. A case of this sort came under the observation of the reviewer when summoned by two physicians in consultation over a woman in labor, who had vaginal hemorrhage and in whom the physicians could not find the cervix or os uteri. On careful inspection, the uterine tissue was greatly distended and very thin and was beginning to tear transversely and blood was issuing from the extending laceration. By placing the patient in the left lateral position and withdrawing the perineum and using a strong light, a very small aperture could be found through which a grooved director could be passed. This was taken as the rudimentary os and was cautiously enlarged until the finger could be inserted, when it was stretched sufficiently so that from this point multiple incisions could be made, opening the cervix freely. The child was then delivered by forceps, the uterus emptied and packed with gauze and the cervical lacerations closed throughout a considerable extent with catgut. Van de Velde calls attention to the fact that in such a case it would be a mistake to deliver the patient by abdominal cesarean section because no adequate aperture would be left for the discharge of the lochia. Vaginal cesarean section he believes to be much safer and indicated in such a case.

Tiflitis and Peritiflitis Complicating Pregnancy.—JAECHKE (*Zentralbl. f. Gynäk.*, 1915, No. 37) describes the case of a primipara, aged twenty-six years, who, during the preceding two years had several attacks of irritation in the region of the appendix which led her family physician to advise the removal of the appendix. This was not done and pregnancy proceeded apparently normally until three weeks before term. The position and presentation of the fetus became abnormal. The patient was sent to hospital with the history of two days before having considerable fever which was thought to result from an attack of influenza. Improvement was followed by higher fever and the physician summoned sent the patient immediately to the hospital. On admission her temperature was 104.5° , pulse 104, of good volume and tension, the tongue was coated and moist, the patient complained of nothing and there were no lumbar pains. No pathological condition could be found in the neck, mouth, lungs or heart. There was slight tenderness over the region of the right kidney and tenderness in the abdomen over the appendix, although it was not well marked. The urine showed abundant leucocytes and some albumin. The question of pyelitis from colon bacillus infection of the right kidney was considered, but the symptoms were thought to point more to appendicitis or possibly a beginning typhoid. Examination of the blood showed 17,000 leucocytes and this led to a diagnosis of appendicitis. Two hours later the tenderness of the region of the cecum had increased considerably and soon after an operation was undertaken. On making an incision in the right lower abdomen thin pus escaped from the abdomen in a stream. This was allowed to escape and a packing of gauze introduced and then with fresh instruments and disinfection a vaginal cesarean section was performed and a dead child delivered by version. After the conclusion of this operation, abdominal section was completed. It was found that an abscess had developed, one wall of which was composed of the right broad ligament and pelvic tissues, the other portion of adhesions and the surrounding intestines. The appendix was thickened and edematous and markedly injected and kinked at its base, the free end of the appendix lying in the region of the ovary. No perforation could be made out. The cecum over an extent of 5 cm. was edematous, covered with a foul grayish red exudate. On the posterior surface of the cecum there were ulcerated surfaces. The free border of the right ovary formed part of the wall of the abscess and although the right Fallopian tube was reddened the right orifice was patent. The uterus was well contracted. Three gauze drains were carefully introduced, one of them covered with sheet rubber and the abdominal wound was left open. The patient was placed in Fowler's position and Ringer's solution was introduced by the drop method into the bowel and 1 c.c. pituitary glandin was injected into the muscles four times daily. This patient died on the fourth day from acute diffuse peritonitis. An autopsy was obtained. In the pus were found the colon bacillus and hemolytic streptococci. Microscopic examination of the appendix showed its mucous membrane intact throughout but the tissues were edematous and swollen with free multiplication of round cells. In reviewing the case, it was impossible to demonstrate the initial point of infection. That the colon and the tissues about the colon were involved was evident, but, in the absence of perforation of the appendix, it was difficult to trace the course

of the infection. The reviewer had occasion to open the abdomen of a young primipara who had suffered from fever after childbirth with indefinite symptoms. Typical puerperal sepsis could be excluded. There was diffuse abdominal tenderness without fixation of the uterus and without a definitely localized painful point upon pressure. The appendix was found reddened, thickened, edematous and without perforation. At the beginning of the descending portion of the colon beneath the peritoneal covering were several areas of laceration which could be plainly made out. The entire colon was larger than normal, reddened and the lymphatics leading from the colon were enlarged. There were some recent and light adhesions between coils of intestine and the omentum. A Mickuliez bag was introduced into the bottom of the pelvis and the upper portion of the wound was closed. The patient made a tedious but complete recovery. In this case, the Widal reaction was negative, the urine was free from colon bacilli and the case was considered one of colon bacillus infection of the appendix and bowel itself. The appendix was removed and on examination found to contain colon bacilli and to be in a condition of acute inflammation.

OPHTHALMOLOGY

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Effect of Accommodation upon the Viscosity of the Lens.—LANCASTER and WILLIAMS (*Ophthalmoscope*, March, 1915, p. 112) have made a series of experiments upon the position of the punctum proximum, from which they infer that, when during accommodation the zonula is relaxed, there is an initial change which occurs quickly (less than a second), but that the effect does not stop there; the lens continues to become more convex, though at a slower and slower rate. They believe that the force which brings about the increased convexity of the lens is opposed by another force which it overcomes only gradually. There is a time element. They call the first force the elasticity of the lens, capsule, etc.; for the second they suggest the name viscosity, for the time element is the essence of viscosity.

Complete Disappearance of an Eyeball following a Birth Injury.—HANDY (*Amer. Jour. Ophthalmol.*, February, 1915, p. 33) observed, in a child of eight years, an empty socket exactly like that resulting from an ordinary enucleation; its depth in fact was somewhat greater. The mother when questioned made the surprising statement that no operation had ever been done. The eyeball had been injured at birth by the